Foreign bank subsidiaries' risk-taking behavior: impact of home and host country national culture

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Abstract

This paper examines whether the risk-taking behavior of foreign affiliates of multinational banks is more influenced by the national culture of their parent banks' home country or the national culture of foreign affiliates' host country. The study uses a dataset of 292 foreign affiliates (i.e., subsidiaries or branch operations) operating in 66 countries having parent banks in 26 countries for empirical analysis. National culture of both home and host countries is measured with four dimensions—uncertainty avoidance, individualism, masculinity and power distance— of Hofstede's framework of national culture. Findings suggest that the national culture of parent banks' home country has higher impact on the risk-taking behavior of foreign affiliates of multinational banks than the national culture of their host country. Specifically, foreign affiliates' risk-taking is higher if parent banks' home country has low uncertainty avoidance, high individualism and low power distance cultural values. This study extends our understanding that how informal institutions, such as the national culture, influence the financial decisions in multinational banks.

1. Introduction

The global financial crisis (GFC) of 2008 has motivated new research on risk-taking behavior of multinational banks. Recent studies such as Gulamhussen *et al.* (2014) and Berger *et al.* (2016) find that more internationalization increases risk of multinational banks and support the market risk hypothesis – whereby internationalization increases bank risk-taking due to market-specific factors in foreign markets – over the diversification hypothesis – whereby internationalization allows banks to reduce risk through diversification of their operations. If internationalization increases risk of a multinational bank, then we left with the question that "what factors encourage foreign affiliates (i.e., wholly-owned subsidiaries or branch operations in countries other than the parent bank's home country) to take more risk and consequently increase the aggregate risk of the multinational bank?" Recent literature has investigated this question to some extent. These studies have largely considered the impact of differential in home country (i.e., the country of parent multinational bank's head office) and host country (i.e., the country in which affiliate operates) market structure and regulations. For example, recent studies report that strict regulations of home country encourage affiliates of international banks to weaken lending standards in host countries with fewer regulations (Houston *et al.* 2012; Ongena *et al.* 2013; Berrospide *et al.* 2016). This paper goes beyond this literature and examines whether differential in home and host country informal institutions, such as national culture, can impact the risk-taking decisions of foreign affiliates of multinational banks. Specifically, we investigate whether the risk-taking behavior of a foreign affiliate of a multinational bank is more influenced by the national culture of its parent bank's home country or by the national culture of its host country.

Culture is generally defined as a set of norms, beliefs, expected behaviors and shared values that serves as guiding principles in people's lives (Schwartz 1994; Hofstede 2001). By guiding human behavior, cultural values reflect what a society/group considers to be legitimate or illegitimate, good or bad, acceptable or unacceptable, or ethical or unethical (Hofstede 2001).

Both the national culture of home country and the national culture of host country might be important for the risk-taking decisions of a foreign affiliate of a multinational bank. For example, the institutional framework of Williamson (2000) suggests that national culture as level-1 informal/social institution conditions all lower level institutions including governance structures and practices of firms operating in a country. Consistent with this view, existing

literature argues that prevailing culture of individuals may exert its influence on decision-making and risk-taking of a business being operated by these individuals (Tse *et al.* 1988; Hilary & Hui 2009; Graham *et al.* 2013).

Strategic decisions and standard operating policies for multinational banks are usually devised at head office level and foreign affiliates in different countries then follow and implement head office decisions and policies. As head office decisions are made by home country managers, the effects of cultural values of home country are likely to influence risk-taking decisions of foreign affiliates. However, home country managers also consider host country culture while making these decisions for foreign affiliates. For example, existing literature suggests that the culture of host country is important for financial decisions of multinational firms as it takes time to learn the local market's language, preferences, and informal institutions (Li & Guisinger 1992; Mian 2006). On the other hand, generally multinational banks hire affiliate management from host country who carry the cultural values of host country. Since several operating decisions are made by the host country managers at affiliate level, host country culture is also likely to influence affiliate level risk-taking decisions. Thus, both home and host country cultures can influence decisions of affiliates, however which culture is more important is an open question and boils down to empirical investigation.

Recent studies have examined the influence of national culture on bank risk-taking behavior (Kanagaretnam *et al.* 2014; Ashraf *et al.* 2016c). However, one concern with both of these studies is that they do not make a distinction between domestic banks and foreign affiliates for examining the impact of national culture on foreign affiliates separately. In addition, since both home and host country cultures might influence foreign affiliates, these studies don't identify and consider cultures of home and host countries separately for foreign affiliates.

To answer our question, we use a sample of 292 foreign affiliates of multinational banks operating in 66 countries having parent banks in 26 countries. We measure national culture of both home and host countries with four dimensions—uncertainty avoidance, individualism vs. collectivism, masculinity vs. femininity and power distance— from Hofstede's framework of national culture. We find robust evidence that risk-taking behavior of a foreign affiliate of a multinational bank is largely determined by the national culture of parent bank's home country rather than the national culture of its host country. Our findings depart from existing literature on bank risk-taking behavior. Existing studies report that national culture influences risk-taking

behavior of all banks operating in a country, however we find that national culture of a country has little impact on foreign affiliates (i.e., foreign banks) operating in that country. Contrary it is the national culture of parent bank's home country which has significant influence on risk-taking behavior of foreign affiliates.

Our study contributes to the existing literature in several ways: *First*, we contribute to the literature which examines the determinants of risk-taking behavior of foreign affiliates of multinational banks. Existing studies largely consider market structure and formal institutions such as banking regulations (Houston *et al.* 2012; Ongena *et al.* 2013; Berrospide *et al.* 2016). We extend this literature by considering the impact of informal institutions in the form of national culture. To best of our knowledge, this paper is the first one to study the influence of national culture on the risk-taking behavior of multinational banks. *Second*, we contribute to national culture and finance literature in general, and to national culture and banking literature (Kanagaretnam *et al.* 2011; Zheng *et al.* 2013; Kanagaretnam *et al.* 2014; Zheng & Ashraf 2014; Ashraf *et al.* 2016c) in particular. We extend this literature by identifying the national culture's significance for risk-taking behavior of foreign affiliates of multinational banks. *Third*, our study also complements to the recently expanding literature which argues the importance of institutional factors for bank practices. In this direction, recent studies have found that country-level legal institutions (Houston *et al.* 2010; Fang *et al.* 2014; Ashraf & Zheng 2015), political institutions (Ashraf 2016, 2017), trade and capital openness (Ashraf 2015) and national culture (Kanagaretnam *et al.* 2011; Kanagaretnam *et al.* 2014; Ashraf *et al.* 2016c) have significant influence on bank dividend payments, risk-taking and earnings management practices. We add to this literature by considering the impact of national culture on risk-taking behavior of foreign affiliates of multinational banks.

Rest of the paper proceeds as follows: Section 2 defines national cultural framework used in this study. Section 3 summarizes recent related literature. Section 4 explains the expected impact of four dimensions of national culture on bank risk-taking behavior. Section 5 describes data. Section 6 introduces methodology and variables. Section 7 reports empirical results. Final section concludes the study.

2. Measurement of national culture

We use national cultural framework of Hofstede (1980), Hofstede (2001) and Hofstede *et al.* (2010) to measure national culture. Hofstede (1980) defines national culture as the collective mental programming that distinguishes the individuals of a nation from the individuals of other nations. Hofstede (1980) measures national culture with four dimensions; uncertainty avoidance (UA), individualism/collectivism (IND), masculinity/feminisim (MAS), power distance (PD). Hofstede (2001) adds fifth dimension named as long-term orientation/short-term orientation (LTO). Hofstede *et al.* (2010) update fifth long-term orientation dimension and add a sixth dimension, indulgence/constraint (INDULG), by using the data from world value surveys. Each country has a score on a sclae from 0 to 100 for each of these dimensions. These country scores reflect the relative position of a country versus other countries, rather than being absolute values. Higher scores of each of these dimensions indicate high uncertainty avoidance, high individualism, high masculinity and high power distance cultural values and vice versa.

The framework of national culture identified by Hofstede is not without criticisms. One shortcoming of Hofstede's early four dimensions of national culture is that they are based on survey data collected from IBM subsidiaries in 72 countries over the period 1967-1973. Culturalist theorists argue that the culture remains highly stable over time because the cultural values are deeply rooted in history and transmit from generation to generation (Weber 1905; Huntington 1996). Building on this culturalist perspective, Hofstede (2001) argues that the scores on his dimensions of national culture capture the historical evolution of cultural values and are very persistent over time. This perspective suggests that culture drives societal developments rather than the other way around.

Contrary, the societal value change perspective argues that the cultural values might change as countries develop economically or globalised (Bell 1976; Inglehart 1990; Inglehart & Baker 2000). Due to economic development and modernization, economic structures of countries are subject to changes first from agriculture to industrial sectors and then from industrial to service sectors. While the hierarchical forms of organizations are stressed in industrial firms, the service firms require more autonomy and self expression (Inglehart 1990). Thus, the societal values such as power distance and individualism might change over time (Beugelsdijk *et al.* 2015). Similarly, the increased globalization can cause global convergence of cultures by exposing individuals from different cultures to same education systems, management practices,

and consumer goods. For instance, the colonial effects still can be observed in several cultures (Ascione 2016). Likewise, due to the global economic power of the USA over most of the last century, several societies have experienced cultural change in the direction of a more Americanized, global culture (Heuer et al. 1999; Ritzer & Ryan 2004).

Thus, the societal value change perspective raises a concern with Hofstede's framework that whether the early four dimensions are still valid to capture cross-national cultural differences. Recent studies have examined this concern to some extent. For instance, Beugelsdijk *et al.* (2015) replicates Hofstede's dimensions using the recent data from the World Values Survey. They conclude that though national cultures of countries have observed changes in absolute terms however the relative positions of countries, as given in Hofstede's dimensions, have not changed much over time.

Following Mihet (2013) and Ashraf *et al.* (2016c), we use widely used four dimensions (i.e., UA, IND, MAS and PD) to measure national cultures of home and host countries for the purpose of this study.

Uncertainty avoidance is the extent to which the members of a culture feel uncomfortable with unstructured, unknown or uncertain situations. Such cultures typically express a need for predictability and are characterized by well-established rules and procedures. Individualism measures the relationship among individuals of a society. Ties among individuals remain loose in individualistic countries (high individualism), while they integrate in strong in-groups from birth onwards in collectivistic countries (low individualism). Masculinity is a set of attributes, behaviors and roles generally associated with gender. In masculine societies (high masculine), social gender roles are clearly separate. Men are expected to be tough and focused on material success whereas women are assumed to be tender and concerned with the quality of life. Conversely, in feminine societies (low masculinity) social gender roles overlap. Masculine societies are oriented toward social recognition and ego, whereas feminine societies are more relationship-oriented. Power distance dimension measures the acceptability of inequality and dependence in a society. High values of power distance dimension indicate higher acceptance of unequal distribution of power and status among the members of a society and vice versa.

3. Literature Review

This paper specifically builds on two strands of studies: *First*, the studies which examine the impact of home and host country factors on different practices of affiliates of multinational banks. *Second*, the studies which examine the impact of national culture on different practices of banks operating in a country (Kanagaretnam *et al.* 2011; Zheng *et al.* 2013; Kanagaretnam *et al.* 2014; Zheng & Ashraf 2014; Ashraf *et al.* 2016c).

For first strand of studies, recent papers have examined the impact of home- and host-country factors, such as market structure and regulatory environment, on profit margins, capital adequacy ratios and lending activities of foreign affiliates of multinational banks. For instance, Chen and Liao (2011) examine the impact of home- and host-country banking market structure and macroeconomic conditions on profit margins of foreign affiliates of multinational banks. They report foreign affiliates are more profitable when they operate in a host country whose banking sector is less competitive and who has lower GDP growth rates and higher interest and inflation rates. Mili *et al.* (2016) examine the impact of home- and host-country regulatory framework on capital adequacy ratios (CAR) of foreign affiliates. They find that the regulatory framework of a parent bank's home country affects the capitalization of its foreign subsidiaries in host countries. Houston *et al.* (2012) examine the effect of cross-country differences in regulations on international bank flows. They find strong evidence that banks have transferred funds to markets with fewer regulations. Ongena *et al.* (2013) examine the influence of home- and host-country banking regulations on lending activities of multinational banks. They find that lower barriers to entry, tighter restrictions on bank activities, and higher minimum capital requirements in domestic markets are associated with lower bank lending standards abroad. Similarly, Berrospide *et al.* (2016) find that tighter U.S. capital regulation reduces lending by large U.S. global banks to foreign residents. We extend this strand of literature by examining the impact of home- and host-country national culture on risk-taking behavior of foreign affiliates of multinational banks.

For second strand of studies, only recently the literature has started recognizing that cultural effects cannot be ignored in banking despite its regulatory industry nature. For instance, Kanagaretnam *et al.* (2011) examine the relationship between four dimensions of national culture (i.e., uncertainty avoidance, individualism, masculinity and power distance) and earnings quality of banks using a sample of banks from 39 countries. Their findings support that banks manage

earnings more and report smoother earnings in high individualism and low uncertainty avoidance societies. Zheng *et al.* (2013) argue that cultures having higher level of collectivism have higher tendency to be corrupt and find evidence that firms perceive higher corruption in bank lending in collectivist cultures. Zheng and Ashraf (2014) examine cultural effects on bank dividend policies. Their findings suggest that banks pay higher dividends and are more likely to pay dividends in low uncertainty avoidance, low long-term orientation and high masculinity countries. Kanagaretnam *et al.* (2014) relate two dimensions of national culture to bank risk-taking and find that bank risk-taking is higher in high individualism and low uncertainty avoidance countries. In another study, Ashraf *et al.* (2016c) relate four dimensions of national culture to bank risk-taking and find that bank risk-taking is higher in low uncertainty avoidance, low power distance and high individualism countries. Moreover, Boubakri *et al.* (2017) examine whether the national culture impacts bank performance during the global financial crisis and find that banks performed better in countries with higher uncertainty avoidance and power distance cultural values and worse in countries with higher individualism values. We extend this literature by identifying the national culture's significance for risk-taking behavior of affiliates of multinational banks.

4. Dimensions of national culture and bank risk-taking

Uncertainty is a key element in financial contracts (Aggarwal & Goodell 2009). Members of high uncertainty avoidance culture become upset in uncertain situations and try to avoid them (Hofstede 2001). On the other hand, members of low uncertainty avoidance cultures accept uncertainty rather easily and can take more risk in uncertain situations. Consistent with this view, recent evidence establishes that industrial firms (Li *et al.* 2013; Mihet 2013) as well as banks (Kanagaretnam *et al.* 2014; Ashraf *et al.* 2016c) tend to take less risk in high uncertainty avoidance cultures. Since the decisions of foreign affiliates are likely to be influenced by both home- and host-country cultures, we expect that foreign affiliates will take less risk if uncertainty avoidance is high in home- and host-country cultures.

Members of individualist cultures value individual success rather than group achievements. Psychology studies find that individuals take more risk than groups in high-risk situations and individual decisions exhibit higher variance than collectivist decisions (Shupp & Williams 2008). Members of individualist cultures are also likely to be over-optimist and

overconfident who underestimate high risk situations (Chui *et al.* 2010). Recent studies report that industrial firms (Li *et al.* 2013; Mihet 2013) as well as banks (Kanagaretnam *et al.* 2014; Ashraf *et al.* 2016c) tend to take high risk in high individualism cultures. We expect that risk-taking of foreign affiliates will be high if individualism is high in home- and host-country cultures.

High masculinity in dominant culture implies higher competitiveness and achievement values. High masculinity cultures value money and material things. Members are ambitious and self confident. Members like to show-off. Recent studies suggest that individuals from high masculine cultures tend to take higher financial risks regardless of the fact that decision-maker is male or female (Meier-Pesti & Penz 2008). We expect that foreign affiliates will take high risk if masculinity is high in home- and host-country cultures.

The members of high power distance cultures have less freedom and autonomy in decision making that promote conservatism in such cultures (Thompson *et al.* 2009). On the other hand, individuals have more freedom in low power distance cultures. Social mobility is higher and individuals tend to improve their positions in low power distance cultures. This results in opportunity seeking and selection of risky choices (Shane 1993). Recent studies have found that industrial firms (Mihet 2013) as well as banks (Ashraf *et al.* 2016c) tend to take less risk in high power distance cultures. We expect that foreign affiliates will take less risk if power distance is high in home- and host-country cultures.

5. Data

We started sample construction with Hofstede *et al.* (2010)'s data on four dimensions which is available for almost 80 countries. We downloaded balance sheet and income statement accounting data for all commercial banks in these countries over the period 2001-2007 from *Bankscope* database. We choose the time-period from 2001 to 2007 to isolate the effects of Asian crisis of 1998 and global financial crisis which started in 2008. We deleted the banks which have all missing data or have less than two valid observations to calculate bank-level dependent and control variables over the sample period. We also deleted banks of those countries for which sufficient data for country-level control variables was not available. For remaining banks, we started hand-collecting the ownership data. We used different sources to collect ownership data. Specifically, we used information from ownership data reported by Bankcope database, by

Ongena *et al.* (2013)[1] and Claessens and van Horen (2015), and from websites of the large multinational banks. We deleted data for domestic banks operating in a country. We also deleted data for those affiliates of multinational banks where both affiliate and parent bank were operating in same country. After this exercise, we left with data of only foreign affiliates which are controlled by parent banks in other countries. Finally, we linked host country of each affiliate with home country of its parent bank. Our final dataset consists of 292 affiliates operating in 66 countries having parent banks in 26 countries. Table 1 reports sample distribution and values of four cultural dimensions for host countries of affiliates. Table 2 reports sample distribution and values of four cultural dimensions for home countries of affiliates.

（**Insert Table 1 here**）

（**Insert Table 2 here**）

6. Regression model and variables

We specify following cross-sectional ordinary least square econometric model for empirical analysis:

$$Risk - taking\ measure_{i,j}$$
$$= \beta_0 + \beta_1(Dimensions\ of\ host\ or\ home\ country\ national\ culture)_j$$
$$+ \beta_2 Bank\_size_{i,j} + \beta_3 Bank\_growth_{i,j} + \beta_4 LLP\_TA_{i,j}$$
$$+ \beta_5 Bank\_concentration_j + \beta_6 Log\_GDPPC_j + \beta_7 GDP\_growth_j$$
$$+ \beta_8 Inflation_j + \beta_9 Creditor\_rights_j + \beta_{10} Information\_sharing_j$$
$$+ \beta_{11} Law\_order_j + \varepsilon_{i,j} \qquad Eq.(1)$$

Here *i* and *j* subscripts designate bank and country, respectively. Dependent variable measures foreign affiliates' risk-taking behavior. Following recent cross-country studies on bank risk-taking (Houston *et al.* 2010; Kanagaretnam *et al.* 2014; Ashraf *et al.* 2016c), we use Z_score as main proxy of foreign affiliates' risk-taking behavior. Z_score= log[(ROA+CAR)/σ(ROA)], where ROA is return on assets before loan loss provisions and taxes and CAR is equity to total

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[1] Ongena *et al.* (2013) report data on 127 banks which are branches or subsidiaries of 23 foreign banks in 16 countries.

assets ratio both averaged over the period 2001-07. σ(ROA) is standard deviation of annual return on assets before loan loss provisions and taxes over the period 2001-07. Z_score measures the number of standard deviations from mean value by which return has to fall to deplete all shareholders' capital. Higher values of Z_score indicate lower probability of foreign affiliate's default and vice versa. To make interpretation of empirical results easy, we multiply Z_score with '-1' so that higher values of Z_score indicate higher probability of foreign affiliate's default and vice versa. We use SD_NIM as an alternate measure of affiliate's risk-taking behavior. SD_NIM equals to standard deviation of annual net interest margins calculated over the period 2001-07. Higher values of SD_NIM represent higher volatility in interest income and higher lending risk of an affiliate.

For main independent variable, first we use each of the four dimensions of national culture of host country one-by-one, and then use each of the four dimensions of home country one-by-one.

Bank_size, Bank_growth and LLP_TA are three bank-level control variables[2]. Bank_size equals natural logarithm of bank total assets averaged over 2001–07. Bank_growth equals annual total assets growth rate of a bank averaged over 2001–07. LLP_TA equals loan loss provisions to total assets ratio averaged over 2001-07. This variable construction process gives us one observation of dependent and independent bank-level variables for each affiliate included in our sample to estimate cross-sectional regressions.

We include several variables in Eq. (1) to control for banking industry structure, macro-economy, and informational and legal environment. These control variables include Bank_concentration, Log_GDPPC, GDP_growth, Inflation, Creditor_rights, Information_sharing and Law_order.

Bank_concentration equals assets of three largest banks as a percentage of assets of all commercial banks in a country averaged over 2001-07, data taken from global financial development database of World Bank.

Log_GDPPC equals logarithm of annual GDP per capita (current US$) of each country averaged over 2001-07. GDP_growth equals annual GDP growth rate of each country averaged over 2001-07. Inflation equals annual percentage change in consumer prices averaged over 2001-

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[2] Though the equity capital is important for bank behavior (Rahman *et al.* 2015; Ashraf *et al.* 2016b; Zheng *et al.* 2017), we do not include equity ratio as control variable because it is already incorporated in Z-Score (i.e., dependent variable) calculations.

07. Annual data for GDP per capita, GDP growth rates and inflation is obtained from World Development Indicators database of World Bank.

Creditor_rights measures the legal rights of creditors against debtor in case of reorganization or liquidation of the debtor. The index ranges from 0 (weak creditor rights) to 4 (strong creditor rights). Information_sharing is a dummy variable equals 1 if either a public credit registry or a private credit bureau operates in a country and 0 otherwise. Data for Creditor_rights and Information_sharing variables is obtained from Djankov *et al.* (2007). Law_order measures the rule of law tradition in a country, and is proxied by law and order variable averaged over 2001-07 from International Country Risk Guide (ICRG) database. Appendix 1 summarizes the variables used in the study.

We use heteroskedastic-robust standard errors to estimate the *p*-values in Eq. (1). Our empirical strategy is largely motivated by Mihet (2013) who use the same method to examine the impact of home- and host-country cultures on risk-taking behavior of affiliates of industrials firms.

7. Empirical results

7.1 Summary statistics

Table 3 reports summary statistics of main variables. Mean of Z_score is -2.96 with a standard deviation of 1.31. This summary statistics of Z_score is largely comparable with values reported by recent studies on bank risk-taking behavior (Houston *et al.* 2010; Kanagaretnam *et al.* 2014; Ashraf *et al.* 2016c). For example, Houston *et al.* (2010) report -3.24 and Ashraf *et al.* (2016c) report -3.57 mean values of Z_score. Other bank-level and country-level control variables also have considerable within sample variation as shown from mean and standard deviation values reported in Table 3.

（**Insert Table 3 here**）

Table 4 reports Pearson correlations between variables. The 0.47 correlation between Z_score and SD_NIM shows that two alternative proxies approximately capture different aspects of foreign affiliates' risk-taking behavior. The correlation coefficients between other variables are also not strong suggesting that multicollinearity is less a concern in our multivariate models.

Multicollinearity might be serious concern if correlation coefficient between two independent variables exceeds 0.8 (Gujarati & Porter 2009).

（**Insert Table 4 here**）

7.2   Multivariate analysis: main specification

For empirical analysis, first we regress Z_score (i.e., main proxy of foreign affiliate's risk-taking) on host country four cultural dimensions and then on same four cultural dimensions of home country one-by-one after including bank-level, banking industry-level and country-level control variables. In Table 5, Models 1 and 4 report results when four cultural dimensions of 66 host countries are used. Models 5 to 8 report results when four cultural dimensions of host countries are replaced with similar four dimensions of 26 home countries.

As shown from results of Models 1 to 4, all dimensions of host country enter insignificant except PD_host which is only weakly significant at 10% level. On the other hand, results of Models 5 to 8 show that UA_home, IND_home and PD_home enter strongly significant in expected directions. That is, foreign affiliate's risk-taking is higher if national culture of home country has low uncertainty avoidance (Model 5), high individualism (Model 6) and low power distance (Model 8) cultural values. The economic significance of these results is also noteworthy. For example, a one standard deviation change in UA_home (23.05) is associated with a change in Z_score of -0.18 (-0.008 * 23.05) where the mean Z_score is -2.96 in Model 5. Similarly, a one standard deviation change in IND_home (19.60) and PD_home (16.49) are associated with changes in Z_score of 0.23 (0.012 * 19.60) and -0.20 (-0.012 * 16.49) in Models 6 and 8, respectively. MAS_home enters insignificant showing that home country masculinity does not affect risk-taking of foreign affiliates.

The results for host country national culture are largely not consistent with the results of previous two studies on bank risk-taking (Kanagaretnam *et al.* 2014; Ashraf *et al.* 2016c) which report significant cultural effects on all banks operating in a country. Both of these studies include all banks operating in a country for their samples irrespective of the fact that a bank is domestic or foreign affiliate. However here we observe that when this distinction is considered the impact of the national culture of a country is little on foreign affiliates operating in that country.

Contrary, the results reported in Table 5 suggest that the national culture of home country is more important for the risk-taking behavior of a foreign affiliate of a multinational bank than the national culture of its host country. These findings, for an example, suggest that risk-taking behavior of a foreign affiliate of a US multinational bank operating in the China is less determined by less individualist Chinese cultural values (China's IND score is 20), but rather by highly individualist US values (US's IND score is 91). As another example, the risk-taking behavior of a Japanese bank's affiliate operating in Singapore will not be determined by less uncertainty-averse Singaporean cultural norms (Singapore's UA score is 8) as much as by highly uncertainty-averse Japanese values (Japan's UA score is 92). Our findings are largely consistent with the findings of Mihet (2013) who finds that risk-taking behavior of foreign affiliates of non-financial firms is more determined by the national culture of home country as compared to the national culture of host country.

Results for control variables are also consistent with expectations. Negative and significant coefficients of Log_TA suggest that affiliates with large size have lower default risk. These results suggest that larger affiliates have higher diversification opportunities and can benefit from parent banks through internal capital markets (de Haas & van Lelyveld 2010; Jeon & Wu 2014; Frey & Kerl 2015). Positive and significant coefficients of LLP_TA variable show that affiliates with higher loan loss provisions have higher probability of default. These results are consistent with the findings of Houston *et al.* (2010), Kanagaretnam *et al.* (2014), Ashraf *et al.* (2016c) and Ashraf *et al.* (2016a).

Negative and significant coefficients of Bank_concentration show that foreign affiliates have lower default risk in countries where banking industries are concentrated. This result is largely consistent with Chen and Liao (2011) who report that foreign banks have better performance if host country banking sector is less competitive. Positive and significant coefficients of GDP_growth and Inflation show that affiliates take more risk in rapidly growing and inflationary economies. These results are consistent with the findings of recent studies which suggest that higher GDP growth rates and higher inflation results in higher bank risk-taking (Ali & Daly 2010; Chaibi & Ftiti 2015). Negative and significant coefficients of Creditor_rights and Law_order variables show that affiliates have lower risk in countries where lenders have more legal rights against debtors and where law and order tradition is better, respectively. These

results of control variables are largely consistent with the previous literature and validate our model for cultural effects.

（**Insert Table 5 here**）

As an alternative specification, we include same cultural dimension of both host and home country in a regression simultaneously one-by-one and re-estimate results. Table 6 reports empirical results. Model 1 reports results when uncertainty avoidance dimension of both host (UA_host) and home (UA_home) countries are entered. Results remain same as reported in Table 5 that UA_host enters insignificant while UA_home enters negative and significant. Similar results are observed in Models 2 and 4 when individualism and power distance dimensions of both host and home countries are entered simultaneously in regressions. These results confirm the main results reported in Table 5 that home country national culture actually determines the risk-taking behavior of foreign affiliates.

（**Insert Table 6 here**）

7.3   Endogeneity

Though our above results show that the culture of home country has higher impact on risk-taking decisions of foreign affiliates, however one concern with cross-sectional regression results is potential endogeneity of culture. While the culturalist perspective, as described in Section 2, suggests the causality flows from culture to bank risk-taking, the society value change perspective suggests the reverse causality might occur. To account for this concern, we use instrumental variable approach. For doing so, we search for valid instruments that should be strongly correlated with the dimensions of national culture[3] (i.e., relevance) and only affect foreign affiliates' risk-taking through culture (i.e., exogeneity).

Following Ashraf *et al.* (2016c), we instrument uncertainty avoidance and power distance dimensions with the grammatical rule that whether a language has single or multiple second-person singular pronouns (e.g., *you* in English, *tu* and *vous* in French, *usted* and *tú* in Spanish, *du* and *Sie* in German). The grammatical rule is measured as a dummy variable equals 1 if a

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[3] Since masculinity dimension is not significant in both host and home country analyses, we do not consider it in instrumental variable analysis.

language has multiple second person singular pronouns and equals 0 if a language has only single second person singular pronoun. Kashima and Kashima (1998) conclude that the dimensions of national culture have strong association with the number of personal pronouns in different languages. Specifically, they find that uncertainty avoidance and power distance are higher in countries with languages having multiple second-person singular pronouns as compared to the countries with languages having only single second-person singular pronoun. The association between uncertainty avoidance and the number of second-person pronouns is linked through the channel of stress. On the one hand, Hofstede (1980) suggests that the individuals of countries with higher uncertainty avoidance have the characteristic of feeling higher stress. While on the other hand, Kashima and Kashima (1998) argues that their finding might be due to higher decisional stress which speakers of multiple second-person pronoun languages observe in social interactions when choosing between an appropriate second-person pronoun. . The association between power distance and the number of second-person pronouns is linked through the channels of status difference (authority ranking) and social distance (communal sharing). Kashima and Kashima (1998) argue that individuals speaking languages with multiple second-person pronouns are more aware of status difference and have a higher acceptance of relationships based on power differentiation (i.e., status hierarchy) as compared to the individuals speaking languages with only one second-person pronoun[4].

Following Ashraf *et al.* (2016c) and Boubakri *et al.* (2017), we instrument individualism with Murray and Schaller (2010)'s overall index of the historical prevalence of infectious diseases across geopolitical regions. This index codes historical prevalence of nine diseases including malaria, leprosy, leishmanias, schistosomes, trypanosomes, typhus, filariae, dengue, and tuberculosis. The mean of the overall index is approximately 0; positive scores indicate disease prevalence that is higher than the mean, and negative scores indicate disease prevalence that is lower than the mean. Recent research suggests that the regional variation in the prevalence of infectious diseases have played an important role in the origin of many different kinds of cross-cultural differences such as individualism vs. collectivism (Fincher *et al.* 2008). Fincher *et al.* (2008) suggest that individuals of collectivist cultures are more wary of contact with strangers

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[4] Although relationship between multiple second-person pronouns language rule and power distance cultural dimension is fragile (Kashima & Kashima 1998; Davis & Abdurazokzoda 2016), however in absence of any other valid instrument for power distance cultural dimension we check robustness of our results using this language rule as instrumental variable.

(or outgroup members), and are less likely to eat unusual foods. By doing so, collectivism serves as a defence against diseases prevalence, and is more likely to emerge in societies that historically suffered a greater prevalence of different diseases (e.g., pathogens).

At the same time, we expect that the single versus multiple second-person pronouns language rule and the tendency of prevalence of infectious diseases have no direct effect on foreign affiliates' risk-taking behavior, satisfying the exogeneity requirement of an instrument. We perform instrumental variable analysis first for three cultural dimensions of host country and then for three cultural dimensions of home country as shown in Table 7 and 8, respectively.

In first stage regressions (i.e., Models 1, 3 and 5) in both Tables, each of the three cultural dimensions is regressed on instrumental variables including other control variables in each model. The values of instrumental variables (i.e., 2PS and Disease Prevalence) for host countries are used as instrumental variable for host country cultural dimensions in Table 7. While, the values of instrumental variables for home countries are used as instrumental variable for home country cultural dimensions in Table 8. As shown in both Tables, the instrumental variables enter significant in expected directions; that is, the 2PS enters positive with UA_host, PD_host, UA_home and PD_home and Disease Prevalence Index enters negative with IND_host and IND_home. These results show that the countries with languages having multiple second-person pronouns have higher levels of uncertainty avoidance and power distance cultural values. And the countries with higher levels of historical prevalence of diseases have higher individualism in national culture.

In second stage regression results, the fitted values of host country cultural dimensions enter insignificant in Table 7 while the fitted values of home country cultural dimensions enter significant in expected directions in Table 8. These results dispel the concerns that endogeneity is behind our above results and again confirm that home country national culture is more important than the host country national culture for foreign affiliates of multinational banks.

（**Insert Table 7 here**）

（**Insert Table 8 here**）

7.4   Multivariate analysis: robustness checks

We perform several other robustness tests to further confirm the main results: *First*, we use SD_NIM as an alternative proxy of affiliate's risk-taking behavior. SD_NIM equals to

standard deviation of annual values of net interest margin of an affiliate calculated over the period 2001-07. Higher values of SD_NIM represent higher volatility in interest income and higher interest income risk of an affiliate. We use SD_NIM as dependent variable and re-estimate all specification of Table 5. As shown in Table 9 that results remain same; that is, host country dimensions of national culture largely enter insignificant while three of the home country dimensions (except MAS_home) enter significant in expected directions. These results again confirm that home country national culture is more important and have strong influence on lending activities of foreign affiliates.

Second, we use SD_NIM as dependent variable and include same cultural dimension of both host and home country in a regression simultaneously one-by-one. Table 10 reports re-estimated results. Model 1 reports results when uncertainty avoidance dimension of both host (UA_host) and home (UA_home) countries are entered. Results remain same as reported in previous Tables 5, 6 and 9, that UA_host enters insignificant while UA_home enters negative and significant. Similar results are observed in Models 2 and 4 when individualism and power distance dimensions of both host and home countries are entered simultaneously in regressions. These results confirm the main results reported in Table 5, and again suggest that home country national culture has strong effect on lending decisions of foreign affiliates.

（**Insert Table 9 here**）

（**Insert Table 10 here**）

Finally, we also use SD_ROA as another proxy to measure affiliate's risk-taking behavior. SD_ROA equals to standard deviation of annual values of total operating profit before loan loss provisions and taxes calculated over the period 2001-07. Higher values of SD_ROA represent higher volatility in total operating income and higher overall risk of an affiliate. We use SD_ROA as dependent variable and re-estimate all specifications of Tables 5 and 6. In unreported results, we observe that results largely remain same as reported in previous Tables 5, 6, 9 and 10. These results again suggest that home country national culture has strong effect on overall risk of foreign affiliates.

8. Conclusion

The global financial crisis has encouraged new research on risk-taking behavior of multinational banks. In this study, we examine whether the risk-taking behavior of a foreign

affiliate of a multinational bank is more influenced by the national culture of parent bank's home country or the national culture of foreign affiliate's host country. We use a sample of 292 foreign affiliates of multinational banks operating in 66 countries having parent banks in 26 countries for empirical analysis. We measure national culture of both home and host countries with four dimensions—uncertainty avoidance, individualism vs. collectivism, masculinity vs. femininity and power distance— from Hofstede's framework of national culture. Findings of this study provide evidence that risk-taking behavior of a foreign affiliate of a multinational bank is largely determined by the national culture of parent bank's home country rather than the national culture of its host country. Specifically, foreign affiliates take higher risk if parent bank's home country has low uncertainty avoidance, high individualism and low power distance cultural values. Results are robust to endogeneity tests and the use of alternative measures of affiliates' risk-taking.

Findings of this study have important implications for finance research, banking sector regulatory authorities and multinational banks. *First*, findings improve our understanding that how risk-taking decisions of foreign affiliates are influenced by home and host country national cultures. Our findings depart from existing literature on bank risk-taking behavior. Existing studies report that national culture influences risk-taking behavior of all banks operating in a country (Kanagaretnam *et al.* 2014; Ashraf *et al.* 2016c), however we find that national culture of a country has little impact on foreign affiliates (i.e., foreign banks) operating in that country. Contrary it is the national culture of parent bank's home country which has significant influence on risk-taking behavior of foreign affiliates.

Second, recently several proposals have been put forth to regulate multinational banks and their subsidiaries differently than the purely domestic banks (Calzolari & Loranth 2011; Diemer 2016). Our findings suggest that the difference between home and host country informal institutions, such as the national culture, must be considered while devising regulations for multinational banks.

Finally, our findings have important implications for multinational banks which devise standardized operating procedures at head office level for their foreign affiliates. Since our findings show that home country cultural values transmit to foreign affiliates' risk-taking decisions, we suggest that multinational banks should consider home country cultural values while devising risk-management strategies for foreign affiliates.

This study is likely to initiate a new debate that how other informal institutions such as trust and religion can affect the different practices of multinational banks and their affiliates. Another potential area for future research is to carry out a qualitative inquiry to examine how the managers of multinational banks perceive host and home country cultures in making different decisions.

Appendix 1: Variable definitions and data sources

Variable	Definition	Data Source
Dependent variables		
Z_score	Equals -1*[log [(ROA+CAR)/ σ(ROA)]], where ROA and CAR are return on assets before loan loss provisions and taxes and equity to total assets ratios, respectively, both averaged over the period 2001–07. σ(ROA) is the standard deviation of annual values of return on assets before loan loss provisions and taxes over the period 2001–07. Higher values of Z_score imply higher risk-taking by the foreign affiliate.	Bankscope database
Std_NIM	Equals standard deviation of annual net interest income to total earning assets ratio over the period 2001-07. Higher values of Std_NIM imply higher risk-taking by the foreign affiliate.	
Independent Cultural variables		
UAI_host	Uncertainty avoidance index for host countries of foreign affiliates	Hofstede (2001)
IND_host	Individualism vs. collectivism index for host countries of foreign affiliates	
MAS_host	Masculinity vs. femininity index for host countries of foreign affiliates	
PD_host	Power distance index for host countries of foreign affiliates	
UAI_home	Uncertainty avoidance index for home countries of foreign affiliates	Hofstede (2001)
IND_home	Individualism vs. collectivism index for home countries of foreign affiliates	
MAS_home	Masculinity vs. femininity index for home countries of foreign affiliates	
PD_home	Power distance index for home countries of foreign affiliates	
Independent Control variables		
1- Bank-level		
Bank_size	Equals natural logarithm of total assets averaged over 2001–07.	Bankscope database
Bank_growth	Equals annual total assets growth rate of a bank averaged over 2001–07.	
LLP_TA	Equals loan loss provisions to total assets ratio averaged over 2001-07.	
2- Industry-level		
Bank_concentration	Assets of three largest banks as a percentage of assets of all commercial banks in a country averaged over 2001-07.	Global financial development database, World Bank
3- Country-level		
Log_GDPPC	Equals logarithm of GDP per capita (current US$) of host country averaged over 2001-07.	World Development Indicators, World Bank
GDP_growth	Equals annual year-on-year GDP growth rate of host country averaged over 2001-07.	
Inflation	Equals annual percentage change in consumer prices averaged over 2001-07.	
Creditor_rights	A measure of legal rights of creditors against debtor in case of debtor's reorganization or liquidation. The index ranges from 0 (weak creditor rights) to 4 (strong creditor rights).	Djankov *et al.* (2007)
Information_sharing	Dummy variable equals 1 if either a public credit registry or a private credit bureau operates in a country and 0 otherwise.	Djankov *et al.* (2007)
Rule_of_law	Measures the extent to which agents have confidence in and abide by the rules of society, the quality of contract enforcement, the police, and the courts, and the likelihood of crime and violence.	Kaufmann *et al.* (2010)
Instrumental variables		
2PS	A dummy variable equals 1 if a language has multiple second person singular pronouns and equals 0 if a language has only single second person singular pronoun.	Kashima and Kashima (1998)
Diseases Prevalence Index	An overall index of the historical prevalence of nine diseases within different geopolitical regions worldwide. The nine diseases coded include malaria, leprosy, leishmanias, schistosomes, trypanosomes, typhus, filariae, dengue, and tuberculosis. A 4-point coding scheme was employed: 0 = completely absent or never reported, 1 = rarely reported, 2 = sporadically or moderately reported, 3 = present at severe levels or epidemic levels at least once. All nine disease prevalence ratings were standardized by converting them to z scores. The overall index was computed as the mean of z scores for nine diseases. The mean of the overall index is approximately 0; positive scores indicate disease prevalence that is higher than the mean, and negative scores indicate disease prevalence that is lower than the mean.	Murray and Schaller (2010)

References

Aggarwal, R., Goodell, J.W., 2009. Markets and institutions in financial intermediation: National characteristics as determinants. Journal of Banking & Finance 33, 1770-1780

Ali, A., Daly, K., 2010. Macroeconomic determinants of credit risk: Recent evidence from a cross country study. International Review of Financial Analysis 19, 165-171

Ascione, G., 2016. Decolonizing the 'Global': The Coloniality of Method and the Problem of the Unit of Analysis. Cultural Sociology 10, 317-334

Ashraf, B.N., 2015. Trade and capital openness: impact on bank net interest margins, lending and risk-taking behavior. Available at SSRN: http://ssrn.com/abstract=2665888

Ashraf, B.N., 2016. Political institutions, political pressure and state-owned banks' lending and performance: evidence from developing countries. Working paper.

Ashraf, B.N., 2017. Political Institutions and Bank Risk-Taking Behavior. Journal of Financial Stability 29, 13-35

Ashraf, B.N., Arshad, S., Hu, Y., 2016a. Capital Regulation and Bank Risk-Taking Behavior: Evidence from Pakistan. International Journal of Financial Studies 4, 16

Ashraf, B.N., Bibi, B., Zheng, C., 2016b. How to regulate bank dividends? Is capital regulation an answer? Economic Modelling 57, 281-293

Ashraf, B.N., Zheng, C., 2015. Shareholder protection, creditor rights and bank dividend policies. China Finance Review International 5, 161-186

Ashraf, B.N., Zheng, C., Arshad, S., 2016c. Effects of national culture on bank risk-taking behavior. Research in International Business and Finance 37, 309-326

Bell, D., 1976. The coming of the post-industrial society. In: The Educational Forum, pp. 574-579. Taylor & Francis

Berger, A.N., El Ghoul, S., Guedhami, O., Roman, R.A., 2016. Internationalization and bank risk. Management Science (In press)

Berrospide, J., Correa, R., Goldberg, L., Niepmann, F., 2016. International Banking and Cross-border Effects of Regulation: Lessons from the United States. National Bureau of Economic Research

Beugelsdijk, S., Maseland, R., van Hoorn, A., 2015. Are Scores on Hofstede's Dimensions of National Culture Stable over Time? A Cohort Analysis. Global Strategy Journal 5, 223-240

Boubakri, N., Mirzaei, A., Samet, A., 2017. National culture and bank performance: Evidence from the recent financial crisis. Journal of Financial Stability 29, 36-56

Calzolari, G., Loranth, G., 2011. Regulation of multinational banks: A theoretical inquiry. Journal of Financial Intermediation 20, 178-198

Chaibi, H., Ftiti, Z., 2015. Credit risk determinants: Evidence from a cross-country study. Research in International Business and Finance 33, 1-16

Chen, S.-H., Liao, C.-C., 2011. Are foreign banks more profitable than domestic banks? Home- and host-country effects of banking market structure, governance, and supervision. Journal of Banking & Finance 35, 819-839

Chui, A.C.W., Titman, S., Wei, K.C.J., 2010. Individualism and Momentum around the World. The Journal of Finance 65, 361-392

Claessens, S., van Horen, N., 2015. The Impact of the Global Financial Crisis on Banking Globalization. IMF Economic Review 63, 868-918

Davis, L.S., Abdurazokzoda, F., 2016. Language, culture and institutions: Evidence from a new linguistic dataset. Journal of Comparative Economics 44, 541-561

de Haas, R., van Lelyveld, I., 2010. Internal capital markets and lending by multinational bank subsidiaries. Journal of Financial Intermediation 19, 1-25

Diemer, M., 2016. Who should rescue subsidiaries of multinational banks? Journal of Financial Stability 26, 159-174

Djankov, S., McLiesh, C., Shleifer, A., 2007. Private credit in 129 countries. Journal of financial Economics 84, 299-329

Fang, Y., Hasan, I., Marton, K., 2014. Institutional development and bank stability: Evidence from transition countries. Journal of Banking & Finance 39, 160-176

Fincher, C.L., Thornhill, R., Murray, D.R., Schaller, M., 2008. Pathogen prevalence predicts human cross-cultural variability in individualism/collectivism. Proceedings of the Royal Society of London B: Biological Sciences 275, 1279-1285

Frey, R., Kerl, C., 2015. Multinational banks in the crisis: Foreign affiliate lending as a mirror of funding pressure and competition on the internal capital market. Journal of Banking & Finance 50, 52-68

Graham, J.R., Harvey, C.R., Puri, M., 2013. Managerial attitudes and corporate actions. Journal of Financial Economics 109, 102-121

Gujarati, D.N., Porter, D.C., 2009. Basic econometrics. 5th Edition, Tata McGraw Hill Education Pvt. Ltd., New Delhi, India.

Gulamhussen, M.A., Pinheiro, C., Pozzolo, A.F., 2014. International diversification and risk of multinational banks: Evidence from the pre-crisis period. Journal of Financial Stability 13, 30-43

Heuer, M., Cummings, J.L., Hutabarat, W., 1999. Cultural stability or change among managers in Indonesia? Journal of International Business Studies 30, 599-610

Hilary, G., Hui, K.W., 2009. Does religion matter in corporate decision making in America? Journal of Financial Economics 93, 455-473

Hofstede, G., 1980. Culture's consequences: International differences in work-related values. Sage, Beverly Hills, CA.

Hofstede, G., 2001. Culture's consequences: Comparing values, behaviors, institutions and organizations across nations. Sage Publications, Thousand Oaks, CA.

Hofstede, G., Hofstede, G.J., Minkov, M., 2010. Cultures and organizations: Software of the mind. McGraw-Hill, New York, NY.

Houston, J.F., Lin, C., Lin, P., Ma, Y., 2010. Creditor rights, information sharing, and bank risk taking. Journal of Financial Economics 96, 485-512

Houston, J.F., Lin, C., Ma, Y.U.E., 2012. Regulatory Arbitrage and International Bank Flows. The Journal of Finance 67, 1845-1895

Huntington, S.P., 1996. The clash of civilizations and the remaking of world order. New York: Simon & Schuster.

Inglehart, R., 1990. Culture shift in advanced industrial society. Princeton, NJ: Princeton University Press.

Inglehart, R., Baker, W.E., 2000. Modernization, cultural change, and the persistence of traditional values. American sociological review, 19-51

Jeon, B.N., Wu, J., 2014. Global banks and internal capital markets: Evidence from bank-level panel data in emerging economies. Journal of Multinational Financial Management 28, 79-94

Kanagaretnam, K., Chee Yeow, L., Lobo, G.J., 2014. Influence of National Culture on Accounting Conservatism and Risk-Taking in the Banking Industry. Accounting Review 89, 1115-1149

Kanagaretnam, K., Lim, C.Y., Lobo, G.J., 2011. Effects of national culture on earnings quality of banks. Journal of International Business Studies 42, 853-874

Kashima, E.S., Kashima, Y., 1998. Culture and language: The case of cultural dimensionsand personal pronoun use. Journal of Cross-Cultural Psychology 29, 461-486

Kaufmann, D., Kraay, A., Mastruzzi, M., 2010. Response to 'What do the Worldwide Governance Indicators Measure?'. European Journal of Development Research 22, 55-58

Li, J., Guisinger, S., 1992. The Globalization of Service Multinationals in the "Triad" Regions: Japan, Western Europe and North America. Journal of International Business Studies 23, 675-696

Li, K., Griffin, D., Yue, H., Zhao, L., 2013. How does culture influence corporate risk-taking? Journal of Corporate Finance 23, 1-22

Meier-Pesti, K., Penz, E., 2008. Sex or gender? Expanding the sex-based view by introducing masculinity and femininity as predictors of financial risk taking. Journal of Economic Psychology 29, 180-196

Mian, A., 2006. Distance constraints: The limits of foreign lending in poor economies. The Journal of Finance 61, 1465-1505

Mihet, R., 2013. Effects of culture on firm risk-taking: a cross-country and cross-industry analysis. Journal of Cultural Economics 37, 109-151

Mili, M., Sahut, J.-M., Trimeche, H., Teulon, F., 2016. Determinants of the capital adequacy ratio of foreign banks' subsidiaries: The role of interbank market and regulation. Research in International Business and Finance (In press)

Murray, D.R., Schaller, M., 2010. Historical prevalence of infectious diseases within 230 geopolitical regions: A tool for investigating origins of culture. Journal of Cross-Cultural Psychology 41, 99-108

Ongena, S., Popov, A., Udell, G.F., 2013. "When the cat's away the mice will play": Does regulation at home affect bank risk-taking abroad? Journal of Financial Economics 108, 727-750

Rahman, M.M., Zheng, C., Ashraf, B.N., 2015. Bank size, risk-taking and capital regulation in Bangladesh. Eurasian Journal of Business and Economics 8, 95-114

Ritzer, G., Ryan, M., 2004. Americanisation, McDonaldisation and globalisation. In: Issues in Americanisation and culture. Edinburgh: Edinburgh University Press, pp. 41-60.

Schwartz, S.H., 1994. Beyond individualism/collectivism: New cultural dimensions of values. Sage Publications, Inc.

Shane, S., 1993. Cultural influences on national rates of innovation. Journal of Business Venturing 8, 59-73

Shupp, R.S., Williams, A.W., 2008. Risk preference differentials of small groups and individuals. Economic Journal 118, 258-283

Thompson, J.D., Scott, W.R., Zald, M.N., 2009. Organizations in action: Social science bases of administrative theory. Transaction Books.

Tse, D.K., Lee, K.-h., Vertinsky, I., Wehrung, D.A., 1988. Does culture matter? A cross-cultural study of executives' choice, decisiveness, and risk adjustment in international marketing. The Journal of Marketing, 81-95

Weber, M., 1905. The Protestant ethic and the" spirit" of capitalism and other writings. Translated by Talcott Parsons, with an introduction by Anthony Giddens, (1992. Routledge: London and New York).

Williamson, O.E., 2000. The new institutional economics: taking stock, looking ahead. Journal of economic literature 38, 595-613

Zheng, C., Ashraf, B.N., 2014. National culture and dividend policy: International evidence from banking. Journal of Behavioral and Experimental Finance 3, 22-40

Zheng, C., Rahman, M.M., Begum, M., Ashraf, B.N., 2017. Capital Regulation, the Cost of Financial Intermediation and Bank Profitability: Evidence from Bangladesh. Journal of Risk and Financial Management 10, 9

Zheng, X., El Ghoul, S., Guedhami, O., Kwok, C.C., 2013. Collectivism and corruption in bank lending. Journal of International Business Studies 44, 363-390

Table 1 Sample distribution on the base of host countries of affiliates

Sr. No.	Host Country	Number of Affiliates	UA_host	IND_host	MAS_host	PD_host
1	ALBANIA	3	70	20	80	90
2	ARGENTINA	12	86	46	56	49
3	AUSTRALIA	4	51	90	61	36
4	AUSTRIA	4	70	55	79	11
5	BELGIUM	4	94	75	54	65
6	BRAZIL	10	76	38	49	69
7	BULGARIA	4	85	30	40	70
8	BURKINA FASO	1	55	15	50	70
9	CANADA	6	48	80	52	39
10	CHILE	1	86	23	28	63
11	CHINA	2	30	20	66	80
12	COLOMBIA	3	80	13	64	67
13	COSTA RICA	1	86	15	21	35
14	CROATIA	9	80	33	40	73
15	CZECH REPUBLIC	6	74	58	57	57
16	DENMARK	2	23	74	16	18
17	DOMINICAN REPUBLIC	2	45	30	65	65
18	ECUADOR	2	67	8	63	78
19	EGYPT	3	80	25	45	70
20	EL SALVADOR	2	94	19	40	66
21	FINLAND	1	59	63	26	33
22	FRANCE	7	86	71	43	68
23	GERMANY	10	65	67	66	35
24	GHANA	2	65	15	40	80
25	HONDURAS	1	50	20	40	80
26	HONG KONG	8	29	25	57	68
27	HUNGARY	7	82	80	88	46
28	INDIA	5	40	48	56	77
29	INDONESIA	2	48	14	46	78
30	IRELAND	3	35	70	68	28
31	ITALY	3	75	76	70	50
32	JAMAICA	1	13	39	68	45
33	JORDAN	1	65	30	45	70
34	KENYA	5	50	25	60	70
35	LATVIA	5	63	70	9	44
36	LEBANON	2	50	40	65	75
37	LITHUANIA	3	65	60	19	42
38	MEXICO	9	82	30	69	81
39	MOROCCO	1	68	46	53	70
40	MOZAMBIQUE	1	44	15	38	85
41	NETHERLANDS	2	53	80	14	38

42	NORWAY	2	50	69	8	31
43	PAKISTAN	4	70	14	50	55
44	PANAMA	11	86	11	44	95
45	PERU	5	87	16	42	64
46	PHILIPPINES	2	44	32	64	94
47	POLAND	16	93	60	64	68
48	PORTUGAL	4	99	27	31	63
49	ROMANIA	9	90	30	42	90
50	RUSSIA	6	95	39	36	93
51	SENEGAL	1	55	25	45	70
52	SERBIA	8	92	25	43	86
53	SIERRA LEONE	1	50	20	40	70
54	SINGAPORE	1	8	20	48	74
55	SLOVENIA	5	88	27	19	71
56	SOUTH AFRICA	1	49	65	63	49
57	SPAIN	10	86	51	42	57
58	SWEDEN	2	29	71	5	31
59	SWITZERLAND	13	58	68	70	34
60	THAILAND	1	64	20	34	64
61	TURKEY	4	85	37	45	66
62	UNITED KINGDOM	6	35	89	66	35
63	UNITED REPUBLIC	4	50	25	40	70
64	URUGUAY	10	99	36	38	61
65	VENEZUELA	3	76	12	73	81
66	ZAMBIA	3	50	35	40	60
	Total	**292**	**71.92**	**44.39**	**50.93**	**62.11**

Table 2 Sample distribution on the base of home countries of affiliates

Sr. No.	Home Country	Number of Affiliates	UA_home	IND_home	MAS_home	PD_home
1	Argentina	3	86	46	56	49
2	Austria	17	70	55	79	11
3	Belgium	4	94	75	54	65
4	Brazil	4	76	38	49	69
5	Canada	7	48	80	52	39
6	China	9	30	20	66	80
7	Denmark	5	23	74	16	18
8	Finland	5	59	63	26	33
9	France	32	86	71	43	68
10	Germany	19	65	67	66	35
11	Greece	14	100	35	57	60
12	Hungary	1	82	80	88	46
13	India	4	40	48	56	77
14	Iran	2	59	41	43	58
15	Ireland	1	35	70	68	28
16	Italy	25	75	76	70	50
17	Japan	19	92	46	95	54
18	Korea	1	85	18	39	60
19	Lebanon	1	50	40	65	75
20	Lithuania	1	65	60	19	42
21	Netherlands	9	53	80	14	38
22	Portugal	1	99	27	31	63
23	Spain	10	86	51	42	57
24	Sweden	7	29	71	5	31
25	UK	55	35	89	66	35
26	USA	36	46	91	62	40
	Total	**292**	**61.54**	**69.27**	**58.69**	**45.57**

Table 3 Summary statistics of main variables

Variables	Unique Observations	Mean	S.D.	Min	Max
Z_score	292	-2.96	1.31	-8.57	2.12
SD_NIM	292	1.39	1.97	0.02	11.03
UA_host	66	71.92	20.38	8	99
IND_host	66	44.39	22.29	8	90
MAS_host	66	50.93	16.73	5	88
PD_host	66	62.11	19.25	11	95
UA_home	26	61.54	23.05	23	100
IND_home	26	69.27	19.60	18	91
MAS_home	26	58.69	19.30	5	95
PD_home	26	45.57	16.49	11	80
Log_TA	292	14.03	1.98	9.17	20.63
Growth_TA	292	22.03	30.43	-46.75	149.50
LLP_TA	292	0.76	2.31	-1.74	19.56
Bank_concentration	66	64.41	15.35	31.32	99.68
Log_GDPPC	66	8.84	1.29	5.61	10.94
GDP_growth	66	0.06	0.03	0.00	0.14
Inflation	66	0.06	0.06	-0.00	0.24
Creditor_rights	66	1.92	1.18	0	4
Information_sharing	66	0.89	0.31	0	1
Law_order	66	4.01	1.21	1.11	6.00

Table 4 Pearson correlations

	Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
(1)	Z_score	1.00																			
(2)	SD_NIM	0.47	1.00																		
(3)	UA_host	0.24	0.16	1.00																	
(4)	IND_host	-0.17	-0.17	-0.20	1.00																
(5)	MAS_host	-0.11	-0.04	-0.12	0.21	1.00															
(6)	PD_host	0.13	0.16	0.37	-0.72	-0.14	1.00														
(7)	UA_home	-0.12	-0.11	0.20	0.08	0.08	0.06	1.00													
(8)	IND_home	0.18	0.16	0.05	-0.13	-0.05	0.06	-0.52	1.00												
(9)	MAS_home	-0.01	0.02	0.04	-0.10	0.28	0.11	0.15	-0.09	1.00											
(10)	PD_home	-0.14	-0.06	-0.13	-0.03	0.10	0.04	0.45	-0.46	-0.09	1.00										
(11)	Log_TA	-0.26	-0.35	-0.10	0.29	0.05	-0.24	-0.02	0.05	-0.06	-0.15	1.00									
(12)	Growth_TA	0.06	0.13	0.02	-0.09	-0.09	0.23	-0.03	-0.05	-0.10	-0.06	-0.06	1.00								
(13)	LLP_TA	0.31	0.22	0.12	-0.12	-0.04	0.10	0.10	-0.08	0.05	0.03	-0.21	-0.07	1.00							
(14)	Bank_concentration	-0.30	-0.24	-0.24	0.27	0.02	-0.38	0.03	-0.04	-0.04	0.02	0.22	-0.19	-0.12	1.00						
(15)	Log_GDPPC	-0.22	-0.24	-0.08	0.67	0.12	-0.59	0.11	-0.23	-0.04	0.04	0.38	-0.17	-0.11	0.38	1.00					
(16)	GDP_growth	0.22	0.16	0.06	-0.52	-0.26	0.46	-0.07	0.08	-0.05	0.05	-0.26	0.15	0.06	-0.44	-0.51	1.00				
(17)	Inflation	0.33	0.39	0.28	-0.37	-0.14	0.37	-0.01	0.11	0.04	-0.11	-0.26	0.25	0.24	-0.31	-0.47	0.15	1.00			
(18)	Creditor_rights	-0.11	-0.14	-0.25	-0.06	-0.12	-0.00	0.00	-0.20	0.02	0.15	0.01	-0.00	0.00	-0.15	0.09	0.27	-0.12	1.00		
(19)	Information_sharing	0.05	0.05	0.10	0.16	0.10	-0.26	0.03	-0.07	-0.05	0.10	0.07	-0.18	0.06	0.19	0.34	-0.15	-0.09	-0.11	1.00	
(20)	Law_order	-0.34	-0.39	-0.32	0.65	-0.10	-0.57	0.10	-0.20	-0.05	0.03	0.36	-0.07	-0.15	0.44	0.66	-0.39	-0.43	0.16	-0.03	1.00

Table 5 National culture of host and home countries and risk-taking of affiliates of multinational banks

VARIABLES	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)	Model (7)	Model (8)
	Host country national culture				Home country national culture			
	Z_score	Z_score	Z_score	Z_score	Z_score	Z_score	Z_score	Z_score
UA_host	-0.003							
	(0.484)							
IND_host		0.006						
		(0.133)						
MAS_host			-0.004					
			(0.450)					
PD_host				-0.008*				
				(0.066)				
UA_home					-0.008**			
					(0.015)			
IND_home						0.012***		
						(0.002)		
MAS_home							-0.002	
							(0.578)	
PD_home								-0.012***
								(0.003)
Log_TA	-0.071*	-0.070*	-0.071*	-0.066*	-0.077*	-0.088**	-0.072*	-0.090**
	(0.071)	(0.071)	(0.074)	(0.092)	(0.055)	(0.021)	(0.065)	(0.026)
Growth_TA	-0.000	-0.000	-0.000	0.000	-0.000	0.000	-0.001	-0.001
	(0.903)	(0.859)	(0.871)	(0.902)	(0.861)	(0.901)	(0.834)	(0.844)
LLP_TA	0.119***	0.121***	0.119***	0.122***	0.128***	0.129***	0.120***	0.121***
	(0.002)	(0.001)	(0.002)	(0.001)	(0.001)	(0.000)	(0.002)	(0.001)
Bank_concentration	-0.012*	-0.011*	-0.014**	-0.013**	-0.013**	-0.013**	-0.013**	-0.013**
	(0.056)	(0.094)	(0.034)	(0.042)	(0.037)	(0.039)	(0.046)	(0.038)
Log_GDPPC	0.147	0.130	0.174*	0.137	0.177*	0.194*	0.161	0.156
	(0.161)	(0.216)	(0.097)	(0.194)	(0.063)	(0.063)	(0.127)	(0.138)
GDP_growth	7.330**	8.735***	5.760*	9.124***	7.416**	7.096**	7.276**	7.553**
	(0.015)	(0.006)	(0.071)	(0.004)	(0.014)	(0.018)	(0.018)	(0.012)
Inflation	3.910***	4.308***	3.610***	4.426***	4.212***	3.958***	4.146***	3.719***
	(0.004)	(0.002)	(0.008)	(0.001)	(0.002)	(0.003)	(0.003)	(0.006)
Creditor_rights	-0.144**	-0.141**	-0.158***	-0.155**	-0.159***	-0.122**	-0.154**	-0.132**
	(0.027)	(0.022)	(0.009)	(0.011)	(0.008)	(0.046)	(0.013)	(0.025)
Information_sharing	0.152	0.124	0.147	0.028	0.150	0.186	0.143	0.233
	(0.595)	(0.671)	(0.600)	(0.924)	(0.603)	(0.525)	(0.626)	(0.398)
Law_order	-0.143	-0.209**	-0.198**	-0.225**	-0.145	-0.138	-0.158*	-0.147
	(0.141)	(0.049)	(0.031)	(0.019)	(0.126)	(0.149)	(0.096)	(0.110)
Constant	-2.679***	-2.528***	-1.876*	-1.369	-2.130**	-3.501***	-2.327**	-1.809*
	(0.008)	(0.007)	(0.064)	(0.167)	(0.028)	(0.000)	(0.016)	(0.069)
Observations	292	292	292	292	292	292	292	292
R-squared	0.263	0.266	0.270	0.277	0.279	0.287	0.262	0.281

Note: Dependent variable is Z_score in all Models, where higher values of Z_score indicate higher bank risk-taking and vice versa. Four dimensions of national culture (UA_host, IND_host, MAS_host and PD_host for host country national culture and UA_home, IND_home, MAS_home and PD_home for home country national culture) of Hofstede (2001) are main explanatory variables and other bank-level and country-level variables are used as control variables. Detailed definitions of variables are given in Appendix 1. All Models are estimated using cross-sectional ordinary least squares regressions. *P*-values are computed by the heteroskedastic-robust standard errors and are presented in parenthesis. ***, **,* represent statistical significance at 1%, 5%, and 10% levels respectively.

Table 6 National culture of host and home countries and risk-taking of affiliates of multinational banks

VARIABLES	Model (1) Z_score	Model (2) Z_score	Model (3) Z_score	Model (4) Z_score
UA_host	-0.005			
	(0.187)			
IND_host		0.006		
		(0.185)		
MAS_host			-0.004	
			(0.461)	
PD_host				-0.009**
				(0.043)
UA_home	-0.009**			
	(0.010)			
IND_home		0.011***		
		(0.003)		
MAS_home			-0.001	
			(0.900)	
PD_home				-0.011***
				(0.007)
Log_TA	-0.077*	-0.087**	-0.071*	-0.084**
	(0.053)	(0.022)	(0.072)	(0.039)
Growth_TA	-0.000	0.000	-0.000	0.000
	(0.901)	(0.923)	(0.861)	(0.963)
LLP_TA	0.128***	0.130***	0.119***	0.123***
	(0.001)	(0.000)	(0.002)	(0.001)
Bank_concentration	-0.012*	-0.012*	-0.014**	-0.013**
	(0.058)	(0.080)	(0.035)	(0.037)
Log_GDPPC	0.149	0.166	0.173*	0.135
	(0.161)	(0.114)	(0.098)	(0.200)
GDP_growth	7.108**	8.229**	5.754*	8.986***
	(0.017)	(0.011)	(0.072)	(0.005)
Inflation	3.795***	4.127***	3.628***	4.022***
	(0.004)	(0.002)	(0.010)	(0.004)
Creditor_rights	-0.136**	-0.109*	-0.158**	-0.133**
	(0.032)	(0.075)	(0.010)	(0.023)
Information_sharing	0.148	0.160	0.145	0.116
	(0.604)	(0.592)	(0.612)	(0.684)
Law_order	-0.116	-0.185*	-0.197**	-0.209**
	(0.240)	(0.085)	(0.033)	(0.027)
Constant	-2.405**	-3.494***	-1.847*	-0.871
	(0.018)	(0.000)	(0.070)	(0.399)
Observations	292	292	292	292
R-squared	0.284	0.291	0.270	0.293

Note: Dependent variable is Z_score in all Models, where higher values of Z_score indicate higher bank risk-taking and vice versa. Four dimensions of national culture (UA_host, IND_host, MAS_host and PD_host for host country national culture and UA_home, IND_home, MAS_home and PD_home for home country national culture) of Hofstede (2001) are main explanatory variables and other bank-level and country-level variables are used as control variables. Detailed definitions of variables are given in Appendix 1. All Models are estimated using cross-sectional ordinary least squares regressions. *P*-values are computed by the heteroskedastic-robust standard errors and are presented in parenthesis. ***, **,* represent statistical significance at 1%, 5%, and 10% levels respectively.

Table 7 Instrumental variable analysis: National culture of host countries and foreign affiliates' risk-taking

Variables	Model (1) First stage UA_host	Model (2) Second stage Z_score	Model (3) First stage IND_host	Model (4) Second stage Z_score	Model (5) First stage PD_host	Model (6) Second stage Z_score
2PS	31.223***				6.310**	
	(0.000)				(0.012)	
Disease Prevalence			-11.297***			
			(0.000)			
UA_host_fitted		**-0.003**				
		(0.613)				
IND_host_fitted				**-0.015**		
				(0.244)		
PD_host_fitted						**-0.017**
						(0.613)
Log_TA	-0.777	-0.060	0.019	-0.074*	0.140	-0.055
	(0.142)	(0.156)	(0.966)	(0.062)	(0.778)	(0.207)
Growth_TA	0.015	0.000	0.001	-0.000	0.068**	0.001
	(0.598)	(0.942)	(0.972)	(0.930)	(0.036)	(0.705)
LLP_TA	0.514**	0.119**	-0.240	0.117***	-0.286	0.112**
	(0.026)	(0.024)	(0.385)	(0.002)	(0.491)	(0.038)
Bank_concentration	0.024	-0.011*	-0.275***	-0.017**	0.042	-0.010*
	(0.789)	(0.081)	(0.000)	(0.019)	(0.585)	(0.087)
Log_GDPPC	0.514	0.185*	2.270*	0.234*	-3.001**	0.133
	(0.719)	(0.096)	(0.064)	(0.068)	(0.012)	(0.277)
GDP_growth	1.289	6.532*	-220.277***	4.582	197.237***	9.818
	(0.978)	(0.057)	(0.000)	(0.221)	(0.000)	(0.222)
Inflation	77.186***	5.021***	-38.188***	3.696***	7.481	4.886***
	(0.000)	(0.004)	(0.007)	(0.007)	(0.725)	(0.003)
Creditor_rights	-1.450**	-0.156**	-1.473**	-0.192***	0.211	-0.148**
	(0.042)	(0.038)	(0.045)	(0.005)	(0.819)	(0.027)
Information_sharing	6.704	0.259	5.341	0.218	-6.409	0.129
	(0.196)	(0.464)	(0.102)	(0.454)	(0.144)	(0.746)
Law_order	-2.534**	-0.264***	5.487***	-0.035	-4.638***	-0.332*
	(0.021)	(0.009)	(0.000)	(0.804)	(0.002)	(0.081)
Constant	53.409***	-2.418**	31.903**	-2.492***	89.216***	-1.110
	(0.001)	(0.016)	(0.027)	(0.007)	(0.000)	(0.716)
Observations	246	246	292	292	246	246
R-squared	0.580	0.289	0.647	0.265	0.505	0.289

Note: This Table reports two stage instrumental variable analysis for foreign affiliates' risk-taking and host country cultural dimensions. In first stage regressions (i.e., Models 1, 3 and 5) host country cultural dimensions are regressed on instrumental variables including other control variables. In second stage regressions (i.e., Models 2, 4 and 6), Z_score is regressed on fitted values of host country cultural dimensions from first stage regressions including other control variables. Dependent variable is UA_host in Model 1, IND_host in Model 3 and PD_host in Model 5. Z_score is dependent variable in Models 2, 4 and 6, where higher values of Z_score represent higher bank risk-taking and vice versa. 2PS a dummy variable equals 1 if a language has multiple second person pronouns and equals 0 if has single second person pronoun, is instrumental variable for UA_host and PD_host dimensions. Diseases Prevalence Index of Murray and Schaller (2010) is used as instrumental variable for IND dimension. UA_host_fitted, IND_host_fitted and PD_host_fitted are fitted cultural variables from first stage regressions. Detailed definitions of variables are given in Appendix 1. All Models are estimated using OLS regressions. *P*-values are computed by the heteroskedastic-robust standard errors and are presented in parenthesis. ***, **,* represent statistical significance at 1%, 5%, and 10% levels respectively.

Table 8 Instrumental variable analysis: National culture of home countries and foreign affiliates' risk-taking

Variables	Model (1) First stage UA_home	Model (2) Second stage Z_score	Model (3) First stage IND_home	Model (4) Second stage Z_score	Model (5) First stage PD_home	Model (6) Second stage Z_score
2PS	37.987***				10.184***	
	(0.000)				(0.000)	
Disease Prevalence			-23.045***			
			(0.000)			
UA_home_fitted		**-0.009****				
		(0.012)				
IND_home_fitted				**0.017****		
				(0.001)		
PD_home_fitted						**-0.035****
						(0.012)
Log_TA	-0.043	-0.078*	0.307	-0.097**	-1.456***	-0.129***
	(0.930)	(0.051)	(0.512)	(0.014)	(0.006)	(0.004)
Growth_TA	-0.053*	-0.001	-0.067**	0.001	-0.021	-0.001
	(0.054)	(0.850)	(0.036)	(0.794)	(0.473)	(0.778)
LLP_TA	0.460	0.130***	-0.583**	0.134***	-0.059	0.123***
	(0.210)	(0.001)	(0.037)	(0.000)	(0.875)	(0.001)
Bank_concentration	0.053	-0.013**	-0.003	-0.013**	0.031	-0.013**
	(0.422)	(0.037)	(0.961)	(0.037)	(0.629)	(0.044)
Log_GDPPC	-0.090	0.181*	-1.965**	0.211**	-1.032	0.145
	(0.931)	(0.087)	(0.017)	(0.046)	(0.339)	(0.171)
GDP_growth	-2.363	7.382**	48.859	6.897**	9.970	7.757**
	(0.955)	(0.015)	(0.259)	(0.023)	(0.823)	(0.011)
Inflation	10.112	4.232***	12.605	3.872***	-34.902*	2.902**
	(0.492)	(0.001)	(0.493)	(0.004)	(0.052)	(0.036)
Creditor_rights	-0.429	-0.160***	-1.071	-0.105*	2.039**	-0.084
	(0.579)	(0.009)	(0.129)	(0.094)	(0.013)	(0.172)
Information_sharing	0.978	0.148	1.086	0.204	7.349*	0.398
	(0.736)	(0.607)	(0.716)	(0.478)	(0.073)	(0.206)
Law_order	-0.993	-0.143	0.198	-0.128	0.162	-0.128
	(0.327)	(0.132)	(0.821)	(0.183)	(0.870)	(0.184)
Constant	41.485***	-2.044**	73.162***	-4.011***	58.006***	-0.386
	(0.000)	(0.034)	(0.000)	(0.000)	(0.000)	(0.760)
Observations	291	291	292	292	291	291
R-squared	0.650	0.278	0.527	0.288	0.168	0.278

Note: This Table reports two stage instrumental variable analysis for foreign affiliates' risk-taking and home country cultural dimensions. In first stage regressions (i.e., Models 1, 3 and 5) home country cultural dimensions are regressed on instrumental variables including other control variables. In second stage regressions (i.e., Models 2, 4 and 6), Z_score is regressed on fitted values of home country cultural dimensions from first stage regressions including other control variables. Dependent variable is UA_home in Model 1, IND_home in Model 3 and PD_home in Model 5. Z_score is dependent variable in Models 2, 4 and 6, where higher values of Z_score represent higher bank risk-taking and vice versa. 2PS a dummy variable equals 1 if a language has multiple second person pronouns and equals 0 if has single second person pronoun, is instrumental variable for UA_home and PD_home dimensions. Diseases Prevalence Index of Murray and Schaller (2010) is used as instrumental variable for IND dimension. UA_home_fitted, IND_home_fitted and PD_home_fitted are fitted cultural variables from first stage regressions. Detailed definitions of variables are given in Appendix 1. All Models are estimated using OLS regressions. *P*-values are computed by the heteroskedastic-robust standard errors and are presented in parenthesis. ***, **,* represent statistical significance at 1%, 5%, and 10% levels respectively.

Table 9 Alternate risk-taking measure and risk-taking of affiliates of multinational banks

VARIABLES	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)	Model (7)	Model (8)
	Host country national culture				Home country national culture			
	SD_NIM	SD_NIM	SD_NIM	SD_NIM	SD_NIM	SD_NIM	SD_NIM	SD_NIM
UA_host	-0.007							
	(0.168)							
IND_host		0.009						
		(0.213)						
MAS_host			-0.005					
			(0.506)					
PD_host				-0.008*				
				(0.098)				
UA_home					-0.010**			
					(0.019)			
IND_home						0.014***		
						(0.009)		
MAS_home							-0.000	
							(0.955)	
PD_home								-0.014***
								(0.008)
Log_TA	-0.224***	-0.222***	-0.224***	-0.219***	-0.231***	-0.246***	-0.224***	-0.237***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Growth_TA	0.004	0.004	0.004	0.005	0.004	0.005	0.004	0.004
	(0.342)	(0.315)	(0.314)	(0.221)	(0.299)	(0.186)	(0.321)	(0.313)
LLP_TA	0.078	0.079	0.076	0.079	0.086	0.087	0.076	0.077
	(0.226)	(0.198)	(0.226)	(0.186)	(0.166)	(0.152)	(0.227)	(0.215)
Bank_concentration	-0.008	-0.003	-0.007	-0.007	-0.007	-0.007	-0.006	-0.006
	(0.317)	(0.761)	(0.411)	(0.431)	(0.411)	(0.401)	(0.442)	(0.441)
Log_GDPPC	0.363***	0.257*	0.332**	0.295**	0.343***	0.364***	0.324**	0.321**
	(0.009)	(0.066)	(0.017)	(0.029)	(0.010)	(0.007)	(0.018)	(0.018)
GDP_growth	5.370*	7.671**	3.901	6.895**	4.898	4.504	4.951	5.024
	(0.098)	(0.033)	(0.356)	(0.041)	(0.135)	(0.179)	(0.151)	(0.129)
Inflation	9.207***	9.042***	8.324***	8.998***	8.754***	8.441***	8.647***	8.383***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Creditor_rights	-0.222**	-0.158*	-0.192**	-0.189**	-0.194**	-0.149*	-0.190**	-0.175**
	(0.010)	(0.066)	(0.021)	(0.026)	(0.020)	(0.100)	(0.026)	(0.037)
Information_sharing	0.168	0.106	0.163	0.021	0.163	0.208	0.166	0.219
	(0.505)	(0.677)	(0.507)	(0.937)	(0.496)	(0.398)	(0.517)	(0.372)
Law_order	-0.446***	-0.523***	-0.436***	-0.491***	-0.396***	-0.387***	-0.410***	-0.404***
	(0.002)	(0.000)	(0.002)	(0.001)	(0.003)	(0.004)	(0.002)	(0.002)
Constant	3.424***	2.974***	3.398**	4.338***	3.474***	1.788	3.021***	3.456***
	(0.002)	(0.005)	(0.011)	(0.000)	(0.001)	(0.126)	(0.005)	(0.003)
Observations	292	292	292	292	292	292	292	292
R-squared	0.298	0.303	0.295	0.303	0.306	0.311	0.294	0.297

Note: Dependent variable is SD_NIM in all Models, where higher values of SD_NIM indicate higher bank risk-taking and vice versa. Four dimensions of national culture (UA_host, IND_host, MAS_host and PD_host for host country national culture and UA_home, IND_home, MAS_home and PD_home for home country national culture) of Hofstede (2001) are main explanatory variables and other bank-level and country-level variables are used as control variables. Detailed definitions of variables are given in Appendix 1. All Models are estimated using cross-sectional ordinary least squares regressions. *P*-values are computed by the heteroskedastic-robust standard errors and are presented in parenthesis. ***, **,* represent statistical significance at 1%, 5%, and 10% levels respectively.

Table 10 Alternate risk-taking measure and risk-taking of affiliates of multinational banks

VARIABLES	Model (1) SD_NIM	Model (2) SD_NIM	Model (3) SD_NIM	Model (4) SD_NIM
UA_host	**-0.004**			
	(0.409)			
IND_host		**0.008**		
		(0.320)		
MAS_host			**-0.005**	
			(0.468)	
PD_host				**-0.006**
				(0.179)
UA_home	**-0.009****			
	(0.039)			
IND_home		**0.014****		
		(0.011)		
MAS_home			**0.001**	
			(0.846)	
PD_home				**-0.013****
				(0.015)
Log_TA	-0.231***	-0.242***	-0.224***	-0.229***
	(0.000)	(0.000)	(0.000)	(0.000)
Growth_TA	0.004	0.005	0.004	0.005
	(0.321)	(0.191)	(0.317)	(0.228)
LLP_TA	0.086	0.089	0.075	0.080
	(0.172)	(0.132)	(0.228)	(0.179)
Bank_concentration	-0.008	-0.003	-0.007	-0.006
	(0.338)	(0.702)	(0.414)	(0.432)
Log_GDPPC	0.366***	0.300**	0.332**	0.294**
	(0.007)	(0.030)	(0.016)	(0.028)
GDP_growth	5.148	7.058*	3.912	6.815**
	(0.111)	(0.054)	(0.356)	(0.044)
Inflation	9.092***	8.822***	8.294***	8.762***
	(0.000)	(0.000)	(0.001)	(0.000)
Creditor_rights	-0.213**	-0.119	-0.193**	-0.176**
	(0.014)	(0.195)	(0.022)	(0.038)
Information_sharing	0.164	0.149	0.167	0.072
	(0.500)	(0.553)	(0.509)	(0.787)
Law_order	-0.419***	-0.494***	-0.437***	-0.481***
	(0.003)	(0.000)	(0.002)	(0.001)
Constant	3.697***	1.805	3.349**	4.629***
	(0.001)	(0.120)	(0.012)	(0.000)
Observations	292	292	292	292
R-squared	0.307	0.319	0.295	0.305

Note: Dependent variable is SD_NIM in all Models, where higher values of SD_NIM indicate higher bank risk-taking and vice versa. Four dimensions of national culture (UA_host, IND_host, MAS_host and PD_host for host country national culture and UA_home, IND_home, MAS_home and PD_home for home country national culture) of Hofstede (2001) are main explanatory variables and other bank-level and country-level variables are used as control variables. Detailed definitions of variables are given in Appendix 1. All Models are estimated using cross-sectional ordinary least squares regressions. *P*-values are computed by the heteroskedastic-robust standard errors and are presented in parenthesis. ***, **,* represent statistical significance at 1%, 5%, and 10% levels respectively.